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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,939	07/10/2003	Mikio Kondoh	240031US0	9935
22850 7590 01/25/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER KESSLER, CHRISTOPHER S	
			ART UNIT 1742	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/25/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/615,939	KONDOH ET AL.	
	Examiner	Art Unit	
	Christopher Kessler	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-17,19-23,25,26,29 and 36-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-17,19-23,25,26,29 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 14, 15, and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 October 2006 has been entered.

Status of Claims

2. Responsive to communications of 2 October 2006, claims 2, 5, 18, and 24 have been cancelled. Claims 1, 3, 4, 6, 7, 19, 20, 21, 23, 25, 26 and 36 have been amended. New claims 37 and 38 are added, and no new matter is added. Claims 1, 3, 4, 6-17, 19-23, 25, 26, 29 and 36-38 are currently under examination.

Claim Objections

3. Claims 14, 15, and 16 are objected to because of the following informalities: The claims recite a limitation of the ejection force, which is given in units of MPa. MPa is not recognized as a unit consistent with measuring force, but is, rather, a unit of pressure. The Examiner notes for example, that a pressure ratio of a force with respect to a pressure (as stated in claim 17) makes no sense. The Examiner suggests that these claims could be amended to limit the ejection pressure, being more descriptive of applicant's process. Appropriate correction is required.

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Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 16 is dependent upon claim 14. Claim 14 recites that the compacting pressure is 784 MPa or more. Claim 16 recites that the compacting pressure is 392 MPa or more. Claim 16 improperly broadens the scope of claim 14.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 7, 19, 22, 26, 29, 37, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Kokai Patent Application Hei 9[1997]-272901 (translation attached), hereinafter "JP '901."

Regarding claim 1, JP '901 anticipates the invention as claimed. JP '901 discloses a method of preparing a green compact by coating a die with lubricant (see claim 1). JP '901 also teaches that the lubricant is selected from a list comprising zinc stearate lubricants, made by dispersing a solid lubricant in a solvent (see paragraph [0016], for example). The examiner notes that zinc stearate meets the limitation of both a higher fatty acid-based lubricant and an anionic surfactant. The examiner further

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notes that it is well known in the art that a dispersion is made from a powdered solid.

JP '901 further discloses wherein this coating may be accomplished by means of spray coating (see paragraph [0016]). JP '901 further teaches that the die is heated to 150-400 °C (see paragraph [0017]). JP '901 teaches filling a raw material powder whose major component is an active metallic element into the die (see paragraphs [0008-0009], for example). JP '901 teaches compacting the raw material by warm pressurizing to make a green compact (see paragraph [0008], for example). The examiner notes that the process step of ejecting the green compact from the die is inherent in the process for compacting a green compact (see MPEP §2112.01). JP '901 teaches wherein the green compact has high density (see paragraph [0006], for example), and wherein the active metallic element is aluminum (see paragraph [0009], for example). JP '901 does not disclose wherein a new metallic soap film comprising the active metallic element is formed on a surface of the green compact, however, this property would be inherent in the process disclosed in JP '901 (see MPEP §2112).

Regarding claim 7, JP '901 is applied to the reference as stated above in the rejection of claim 1.

Regarding claim 19, JP '901 teaches a dispersion based on water or alcohol (see paragraph [0016]).

Regarding claim 22, JP '901 is applied to the claim as stated above in the rejection of claim 1.

Regarding claim 26, the claimed properties not disclosed in the prior art process would be inherent in that process (see MPEP §2112).

Regarding claim 29, JP '901 is applied to the claim as stated above. JP '901 further teaches sintering of the green body (see paragraph [0026]).

Regarding claim 37, JP '901 is applied to the claim as stated above in the rejection of claim 1. The claimed limitation of the lubricant being applied uniformly onto the inner surface of the die is not specifically disclosed, but would be inherent in the prior art process of spray coating (see MPEP §2112).

Regarding claim 38, JP '901 is applied to the claim as stated above in the rejection of claim 1. The claimed limitation of the soap film formed being uniform is not specifically disclosed, but would be inherent in the prior art process (see MPEP §2112).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '901.

Regarding claim 20, JP '901 does not teach a dispersion of water mixed with an alcohol-based solvent in an amount of from 1 to 50% by volume. However, JP '901 does teach that either water or alcohol may be used for the same utility. It would have been obvious to one of ordinary skill in the art at time invention was made to mix the two solvents with identical utility, to create a solvent with the same utility (see MPEP §2144.06)

8. Claims 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '901 as applied to claim 1 above, and further in view of U.S. Patent 7,083,760 issued to Kondo et al. (hereinafter "Kondo '760").

Regarding claim 14, JP '901 is applied to the claim as stated above. JP '901 is silent with regard to an ejection pressure of 10 MPa or less when the compacting pressure is 784 MPa or more.

Kondo '760 teaches a process for compacting a green compact comprising spraying a powdery higher fatty acid-based lubricant which is dispersed in a dispersion comprising a surfactant onto an inner surface of a die, which is heated (see claim 1, and figure 1, for example); filling a raw material powder whose major component is an active metallic element into the die (see claim 1); compacting the raw material powder by warm pressurizing to make a green compact (see claim 1); and ejecting the green

compact from the die (see abstract, for example); whereby the resulting green compact has a high density (see abstract).

Kondo '760 teaches that ejection pressure is 10 MPa or less when the compacting pressure is 784 MPa or more (see figure 4). Kondo '760 further teaches that the ratio of ejecting pressure with respect to compacting pressure shows a decreasing trend with increasing compacting pressure (see col. 20, lines 15-53, for example).

It would have been obvious to one of ordinary skill in the art at time invention was made to use the high pressures taught by Kondo '760 (cited above) in the process of JP '901, in order to improve density in the green compact and decrease the ejection force, as taught by Kondo '760 (cited above).

Regarding claim 16, JP '901 is applied to the claim as stated above. As stated above, it would have been obvious to one of ordinary skill in the art to use 392 MPa compacting pressure or more as taught by Kondo '760 in the process of JP '901, in order to improve density in the green compact and decrease the ejection force, as taught by Kondo '760 (cited above). The properties not disclosed in the prior art of ejecting pressure being less than 5 MPa would be inherent in the process (see MPEP§2112.01).

Regrading claim 17, JP '901 is applied to the claim as stated above. Kondo '760 teaches that the ratio of ejecting pressure with respect to compacting pressure shows a decreasing trend with increasing compacting pressure (see col. 20, lines 15-53, for example).

9. Claims 3, 6, 10, 11, 13, 17 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '901 in view of U.S. Patent 4,177,069 issued to Kobayashi et al. (hereinafter "Kobayashi").

Regarding claim 3 and claim 6, JP '901 is applied to the claim as stated above. JP '901 does not disclose any specific alloying elements to be added to the raw material powder.

Kobayashi teaches a process for manufacturing sintered compacts of aluminum-base alloys in which the inside surface of the die is coated by a lubricant (see col. 4, line 63-col. 5, line 6). Kobayashi further teaches that the alloys may be made from alloy powders comprising silicon, copper, and magnesium (see col. 3, line 10-col. 4, line 62). It would have been obvious to one of ordinary skill in the art at time of invention to use the raw material powder comprising silicon, taught by Kobayashi, cited above, in order to obtain an alloy with age hardening effects, as taught by Kobayashi (see col. 2, lines 5-23).

Regarding claim 10, JP '901 is applied to the claim as stated above. JP '901 does not teach apparent green density of the compact is 90% or more.

Kobayashi further discloses that the green density of the compact made from aluminum, silicon, copper, and magnesium is preferably 90-99% (see col. 5, lines 7-18).

Regarding claim 11, JP '901 is applied to the claim as stated above. JP '901 does not disclose any specific compacting pressure for aluminum of 392 MPa or more.

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Kobayashi teaches that the compaction is performed at pressures of 3-4 ton/cm², said pressure range overlapping the claimed range and thus establishing a *prima facie* case of obviousness for that range (see MPEP §2144.05). It would have been obvious to one of ordinary skill to select any part of the disclosed prior art range as the reference cited teaches the same utility over the entire range.

Regarding claim 13, JP '901 is applied to the claim as stated above. JP '901 does not disclose compacting pressure of 392-2,500 MPa.

Kobayashi teaches that the compaction is performed at pressures of 3-4 ton/cm², said pressure range overlapping the claimed range and thus establishing a *prima facie* case of obviousness for that range (see MPEP §2144.05). It would have been obvious to one of ordinary skill to select any part of the disclosed prior art range as the reference cited teaches the same utility over the entire range.

Regarding claim 17, neither JP '901 nor Kobayashi disclose wherein the ejection force with respect to the compacting pressure shows a decreasing tendency when the compacting pressure increases. However, the ejection force of the pellet would be an inherent property in the process (see MPEP §2112).

Regarding claim 36, JP '901 is applied to the claim as stated in the rejection of claim 1 above. JP '901 does not teach wherein the apparent density of the green compact is 90% or more. Kobayashi further discloses that the green density of the compact made from aluminum, silicon, copper, and magnesium is preferably 90-99% (see col. 5, lines 7-18).

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10. Claims 1, 3, 4, 6, 7, 17, 19, 29, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '206 in view of JP '901.

Regarding claim 1, JP'206 discloses the invention substantially as claimed. JP '206 teaches a process for compacting a green compact comprising coating a solution of Zn stearate onto a die, filling a raw material powder whose major component is Ti into the die, compacting the material powder to make a green compact (see abstract). JP '206 does not disclose ejecting the green compact from the die, wherein the lubricant is sprayed, wherein the die is heated, wherein the raw material is compacted by warm pressurizing, or wherein a new metallic soap film is formed on the green surface of the compact. Ejecting the green compact from the die is well known in the art as an integral part of a process for compacting a green compact, and it would have been obvious to one of ordinary skill in the art to eject the green compact from the die, in order to proceed with a sintering procedure, for example.

JP '901 discloses a method of preparing a green compact by coating a die with lubricant (see claim 1). JP '901 also teaches that the lubricant is selected from a list comprising zinc stearate lubricants, made by dispersing a solid lubricant in a solvent (see paragraph [0016], for example). The examiner notes that zinc stearate meets the limitation of both a higher fatty acid-based lubricant and an anionic surfactant. The examiner further notes that it is well known in the art that a dispersion is made from a powdered solid. JP '901 further discloses wherein this coating may be accomplished by means of spray coating (see paragraph [0016]). JP '901 further teaches that the die is heated to 150-400 °C (see paragraph [0017]). JP '901 teaches filling a raw material

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powder whose major component is an active metallic element into the die (see paragraphs [0008-0009], for example). JP '901 teaches compacting the raw material by warm pressurizing to make a green compact (see paragraph [0008], for example). The examiner notes that the process step of ejecting the green compact from the die is inherent in the process for compacting a green compact (see MPEP §2112). JP '901 teaches wherein the green compact has high density (see paragraph [0006], for example), and wherein the active metallic element is aluminum (see paragraph [0009], for example). JP '901 does not disclose wherein a new metallic soap film comprising the active metallic element is formed on a surface of the green compact, however, this property would be inherent in the process disclosed in JP '901 (see MPEP §2112).

It would have been obvious to use the compaction process comprising warm pressurizing disclosed in JP '901 in the invention of JP '206 in order to improve the density and green strength of the green compact, as taught by JP '901 (see paragraph [0006]).

Regarding claim 3, JP '206 teaches that the raw material powder comprises iron (see abstract).

Regarding claim 4, JP '206 teaches wherein the raw material powder is Ti powder (see abstract).

Regarding claim 6, JP '206 further teaches wherein the raw material powder comprises iron (see abstract).

Regarding claim 7, JP '206 teaches wherein the raw powder comprises Al powder (see abstract).

Regarding claim 17, neither JP '206 nor JP '901 disclose wherein the ejection force with respect to the compacting pressure shows a decreasing tendency when the compacting pressure increases. However, the ejection force of the pellet would be an inherent property in the process (see MPEP §2112).

Regarding claim 19, JP '206 does not teach wherein the solvent is selected from the group consisting of water and alcohol based solvents. JP '901 teaches a dispersion based on water or alcohol (see paragraph [0016]).

Regarding claim 29, JP '206 is applied to the claim as stated above. JP '901 further teaches sintering of the green body (see paragraph [0026]).

Regarding claim 37, JP '206 is applied to the claim as stated above in the rejection of claim 1. The claimed limitation of the lubricant being applied uniformly onto the inner surface of the die is not specifically disclosed, but would be inherent in the prior art process of spray coating (see MPEP §2112).

Regarding claim 38, JP '206 and JP '901 are applied to the claim as stated above in the rejection of claim 1. The claimed limitation of the soap film formed being uniform is not specifically disclosed, but would be inherent in the prior art process (see MPEP §2112).

11. Claims 1, 3, 4, 6, 7, 8, 9, 11, 12, 14, 15, 17, 19, 21, 23, 25, 29, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo '760, in view of U.S. Patent 6,551,371 issued to Furuta et al. (hereinafter "Furuta").

Regarding claim 1, Kondo '760 teaches a process for compacting a green compact comprising spraying a powdery higher fatty acid-based lubricant which is dispersed in a dispersion comprising a surfactant onto an inner surface of a die, which is heated (see claim 1, and figure 1, for example); filling a raw material powder whose major component is an active metallic element into the die (see claim 1); compacting the raw material powder by warm pressurizing to make a green compact (see claim 1); and ejecting the green compact from the die (see abstract, for example); whereby the resulting green compact has a high density (see abstract).

Kondo '760 further teaches that a new metallic soap film being different from the higher fatty acid-based lubricant and comprising the active metallic element is formed on a surface of the green compact (see claim 1).

Kondo does not disclose wherein the active metallic element is titanium or aluminum.

Furuta teaches that titanium based composites may be prepared by powder metallurgy in the same field of endeavor (see abstract). Furuta further teaches that the materials may be formed by using die compaction (see col. 14, lines 13-19). It would have been obvious to one of ordinary skill in the art at time the invention was made to use the powder composition disclosed in Furuta (see col. 12, line 23-col. 14, line 12, for example), in order to make a composite suitable for application to a valve in an automobile engine, as taught by Furuta (see "Background Art").

Regarding claim 3, Furuta further teaches that the raw material powder comprises aluminum (see abstract).

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Regarding claim 4, Furuta further teaches that the raw material powder comprises titanium alloy (see abstract).

Regarding claim 6, Furuta further teaches that the raw material powder comprises silicon (see abstract).

Regarding claim 7, Furuta further teaches that the raw material powder comprises compounds of aluminum (see abstract).

Regarding claim 8, Furuta further teaches that the raw material powder can comprise borides (see col. 13, lines 9-63).

Regarding claim 9, Furuta teaches that the green density of the compact is desirably

Regarding claim 11, Kondo '760 teaches that the die should be heated from 100 °C or more (see claim 5), said temperature range overlapping the range claimed by applicant, establishing a *prima facie* case of obviousness for that range (see MPEP §2144.05). It would have been obvious to one of ordinary skill to select any part of the disclosed prior art range as the reference cited teaches the same utility over the entire range of 100-225 °C. Kondo '760 teaches that the die is heated to a temperature of at least 100 °C, (see claim 5), and the powder compacted at a high pressure in order to decrease the ejection force (see col. 2, lines 15-31), and that pressure is selected in order to force a higher fatty acid-based lubricant to bond with the metal powder (see col. 8, lines 28-43, for example). It would have been obvious to one of ordinary skill in the art at time of invention choose an compaction pressure over 392 MPa in order to cause a metallic soap film to form on the compact and reduce ejection force.

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Regarding claim 12, Kondo '760 teaches that the die should be heated from 100 °C or more (see claim 5), said temperature range overlapping the range claimed by applicant, establishing a *prima facie* case of obviousness for that range (see MPEP §2144.05). It would have been obvious to one of ordinary skill to select any part of the disclosed prior art range as the reference cited teaches the same utility over the entire range of 100-225 °C. Kondo '760 teaches that the die is heated to a temperature of at least 100 °C, (see claim 5), and the powder compacted at a high pressure in order to decrease the ejection force (see col. 2, lines 15-31), and that pressure is selected in order to force a higher fatty acid-based lubricant to bond with the metal powder (see col. 8, lines 28-43, for example). It would have been obvious to one of ordinary skill in the art at time of invention choose a compaction pressure from 500-2500 MPa in order to cause a metallic soap film to form on the compact and reduce ejection force.

Regarding claim 14, Kondo '760 teaches that ejection pressure is 10 MPa or less when the compacting pressure is 784 MPa or more (see figure 4).

Regarding claim 15, Kondo '760 teaches that ejection pressure is 10 MPa or less when the compacting pressure is 784 MPa or more (see figure 4).

Regarding claim 17, Kondo teaches that the ratio of ejecting pressure with respect to compacting pressure shows a decreasing trend with increasing compacting pressure (see fig. 4).

Regarding claim 19, Kondo '760 teaches to use water as the solvent in the dispersion (see col. 5, line 5-col. 6, line 66).

Regarding claim 21, Kondo '760 teaches to heat to at least 100 °C, the boiling point of said water, and further teaches that it is preferable to heat to less than the melting temperature of the lubricant (see col. 7, lines 20-33).

Regarding claim 23, Kondo '760 teaches that the lubricant has particle diameter of 30 μm or less (see col. 5, lines 10-27).

Regarding claim 25, Kondo '760 teaches that the metal powder forms a metallic soap film (see col. 4, line 33-col. 5, line 4).

Regarding claim 29, the references are applied to the claims as stated in the rejection of claim 1.

Regarding claim 37, Kondo '760 teaches that the lubricant is applied to the die uniformly (see fig. 3, for example).

Regarding claim 38, Kondo '760 teaches that the new metallic soap film is uniform (see col. 7, lines 7-19, for example).

Response to Arguments

12. Applicant's arguments filed 2 October 2006 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3366479 A, JP 50051013 A, WO 3037552 A1, US 5976456 A, US 4938810 A, US 3871877 A, US 20020034453 A1, US 6758662 B2, US 6190605

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B1, US 20030003009 A1, US 5256608 A, US 3626043 A, US 5409518 A, US 20050084407 A1, US 3471270 A.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Kessler whose telephone number is (571) 272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

csk

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